REMARKS

Claims 1-19 are pending in the present application. Claims 1-3 and 10-11 were rejected under 35 U.S.C. §102, and claims 4-9 and 12-19 were rejected under 35 U.S.C. §103. Applicant has amended claims 1 and 15, and has canceled claims 2 and 17. No new matter has been introduced.

Section 102 Rejections

Claims 1-3 and 10-11 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,574,939 (Kekler, *et al.*).

Applicant respectfully traverses these rejections.

In order for a reference to anticipate under section 102, it must disclose, either explicitly, or under the principle of inherency, every claimed limitation of the claimed invention.

Claim 1, which was amended to incorporate limitations of claim 2, recites a microprocessor that includes, *inter alia*, "at least one cluster having at least one functional unit for executing the instruction; and at least one register file having a predetermined number of physical registers to and from which data is write and read in accordance with the instruction . . .wherein the at least one register file has one write port to which an output of the at least one cluster is connected". Claim 10 recites "at least one cluster having at least one functional unit for executing the instruction; and at least one register file having a predetermined number of physical registers to and from which data is write and read in accordance with the instruction, wherein the at least one register file has one write port to which an output of the at least one cluster is connected . . .".

Kekler is directed to a parallel processing system that includes a plurality of clusters. Each cluster contains separate functional units for memory operations, floating point operations, and integer operations, and separate register files for the floating point unit and

the integer unit. The integer register sub-file has 3 write ports and 4 read ports, while the floating point register sub-file has 2 write ports and 4 read ports.

The action cited Kekler as disclosing a register file with one write port as recited in claims 1 and 10. The action also cited Kekler as disclosing a plurality of clusters, each cluster having a plurality of functional units, and a plurality of register sub-files.

Applicant respectfully disagrees.

The clusters disclosed in Kekler include both functional units and register sub-files, whereas the register sub-files recited in Applicant's claims 1 and 10 are separate elements that are not included in the clusters. Thus, Keklers' register sub-files are not separate from the clusters, but are an integral part of the clusters. Furthermore, the register files recited in Applicant's claim 1 has "one write port to which a corresponding cluster sends data to be written . . .", and the register files recited in claim 10 has "one write port to which an output of the at least one cluster is connected," whereas the register files in Kekler's clusters have multiple write ports: 3 for each integer register file and 2 for each floating point register file.

Thus, Kekler fails to disclose "clusters . . . having a plurality of functional units", and a "plurality of register sub-files" or "wherein each of the register sub-files has one write to which a corresponding cluster sends data to be written" as recited in Applicant's claim 1. In addition, Kekler fails to disclose, "at least one cluster having at least one functional unit for executing the instruction; and at least one register file having a predetermined number of physical registers to and from which data is write and read in accordance with the instruction", or "wherein the . . . register file has one write port to which an output of the at least one cluster is connected," as recited in claim 10. Therefore, Applicant urges that Kekler does not anticipate claims 1 and 10. Reconsideration and withdrawal of these section 102 rejections are respectfully requested.

Claims 2-3 and 11 depend from claims 1 or 10, respectively, and are thus patentable for at least the same reasons as claims 1 and 10. Reconsideration and withdrawal of these rejections are respectfully requested.

Section 103 Rejections

Claims 4-9 and 12-19 were rejected under 35 U.S.C. §103 as being obvious over Kekler in view of U.S. Patent Application Publication No. 2001/0004755 (Levy, *et al.*).

Applicant respectfully traverses these rejections.

Claims 4-9 depend from claim 1, and claims 12-14 depend from claim 10. However, for the reasons stated above, Kekler fails to teach or suggest "clusters . . . having a plurality of functional units", and a "plurality of register sub-files" as recited in Applicant's claims 1 and 10. In addition, Kekler fails to teach or suggest "wherein each of the register sub-files has one write to which a corresponding cluster sends data to be written", as recited in claim 1, or "the . . . register file has one write port to which an output of the at least one cluster is connected," as recited in claim 10. The Action cited Levy as disclosing a register-renaming unit recited in claim 4 and means for renaming architected registers recited in claim 12. However, although Levy discloses functional units and register files, Levy is silent on the number of write ports each register file has, or whether the "corresponding cluster sends data to be written into registers in a register sub-file. . .". Levy states that data output from the functional units are shifted into a data cache for access by a memory, rather than into the register files. Thus, Applicant urges that Levy does not correct for the deficiencies of Kekler. Therefore, Applicant urges that a *prima facie* case of obviousness of claims 1 and 10 cannot be maintained over Kekler and Levy, and that dependent claims 4-9 and 12-14 are thus patentable for at least the same reasons as claims 1 and 10. Reconsideration and withdrawal of these rejections are respectfully requested.

Regarding claim 15, Applicant urges that the Examiner has failed to make out a *prima facie* case of obviousness for this rejection. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the combination of prior

art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

Claim 15, which has been amended to incorporate the subject matter of claim 17, is directed to a "method for processing instructions in a microprocessor" that includes "providing clusters each having functional units for executing the instructions; dividing a register file into a plurality of register sub-files each having registers to store data for executing the instructions", "providing one write port for each of the register sub-files so that a cluster associated with a register sub-file sends data to be written to a write port of the register sub-file", and "renaming target registers in the instruction with registers in a register sub-file associated with the selected cluster".

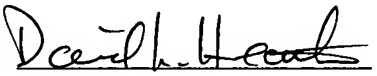
The Action cited Kekler as disclosing providing clusters each having functional units and dividing a register file into a plurality of register sub-files. However, as discussed above in connection with claims 1 and 10, Applicant urges that Kekler discloses clusters that include both functional units and register sub-files, and does not disclose, teach or suggest subdividing a register file into sub-files, as recited in claim 15. Furthermore, as discussed above, Kekler does not teach or suggest providing one write port for each register sub-file, as the register sub-files disclosed in Kekler have multiple write ports. The Action cited Levy for disclosing renaming target registers in the instruction with registers in a register sub-file, but for the reasons discussed above, Levy does not rectify the deficiencies of Kekler. Thus, Applicant urges that a *prima facie* case of obviousness of claim 15 over Kekler and Levy cannot be maintained. Reconsideration and withdrawal of these rejections are respectfully requested.

Claims 16 and 18-19 depend from claim 15, and are thus patentable for at least the same reasons as claim 15. Reconsideration and withdrawal of these rejections are respectfully requested.

CONCLUSION

Applicant urges that claims 1, 3-16, and 18-19 are in condition for allowance for at least the reasons stated. Early and favorable action on this case is respectfully requested.

Respectfully submitted,

By: 

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